



U.S. DEPARTMENT OF
ENERGY

*Presentation to the SRS
Citizens Advisory Board*

**Environmental Management Cleanup Program
Performance Measures Update**

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EM *Environmental Management*
safety ♦ performance ♦ cleanup ♦ closure

Purpose

- **Fulfill Strategic & Legacy Management committee work plan requirement to periodically provide EM performance updates.**
- **Provide a update to EM performance measures for Fiscal Year 2012 (ending Sept 31).**

Note: This update will not include target levels for FY 2013 and beyond as EM Budget & Funding has not been finalized.

SRS Cleanup Program - Background

- **The EM Cleanup Program for the SRS started in the 1990's.**
 - Current Lifecycle Estimate (scope, cost, schedule)
indicates EM cleanup completion by 2042.
- **Performance Measures have been developed to track progress towards end state targets.**

SRS Clean Up Program - Major Areas

**Liquid
Waste**

**Solid
Waste**

**Nuclear
Materials**

**Soil,
Groundwater
& Facilities**

**Insoluble
Waste
(Sludge)**

**Transuranic
Waste**

**Highly
Enriched
Uranium**

**Waste Site
Remediation**

**Soluble
Waste
(Salt)**

**Mixed & Low
Level Waste**

Plutonium

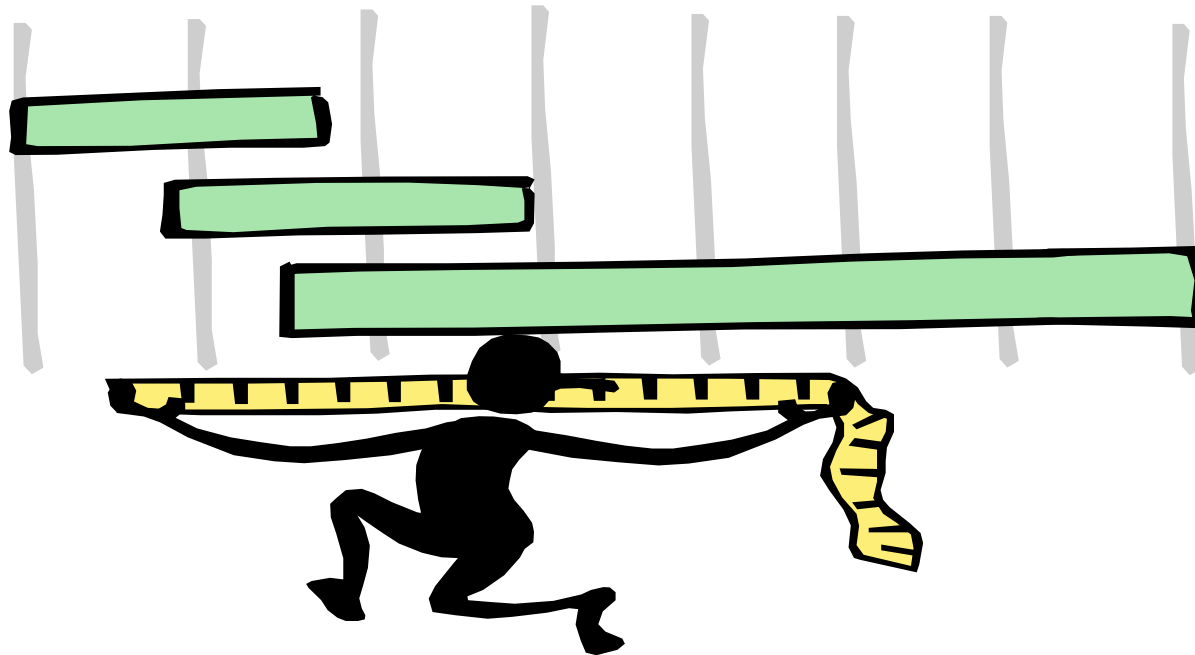
**Facilities
Deactivation &
Decommission**

**Tank
Closures**

**Used
Nuclear
Fuel**

**Reduce
Industrial
Footprint**

“How did we do in FY 2012 ?”



Answer: Significant Progress Made

Highlights of FY2012 SRS Cleanup Program

- **Stabilized record amount of Radioactive Waste (Canisters)**
- **Closed two Liquid Waste Tanks**
- **Best year ever for Transuranic Waste (TRU) shipments to WIPP**
- **Completed Highly Enriched Uranium (HEU) Blend Down shipments to Tennessee Valley Authority**
- **Shipped some non-moxable Plutonium to WIPP for disposition**
- **Continued receipt and safe storage of Used Nuclear Fuel**
- **Completed Recovery Act initiative to reduce industrial footprint by 85%**

SRS Cleanup Program: Performance Measures Summary

EM Site Cleanup- Major Categories	Unit of Measure	Target FY12	Actuals FY12	Cum thru FY12	End State Quantity	% Complete	Est. Year to Complete
Liquid Waste							
Vitrify Insoluble Waste (Sludge)	Canisters	275	277	3,528	7,580	47%	2026
Process Salt Solution	k Gallons	1,286	1,251	6,719	124,657	5%	2026
Close Tanks - Old Style	Tanks	2	2	4	24	17%	2022
Close Tanks - Newer Style	Tanks	0	0	0	27	0%	2028
Solid Waste							
Transuranic Waste Disposed							
Legacy TRU (prior to 2009)	Cu Meters	1,680	1,602	9,490	11,084	86%	2014
Newly Generated TRU	Cu Meters	0	73	73	3,980	Ongoing	TBD
Mixed & Low-Level Waste Disposed							
Legacy (prior to 2008)	Cu Meters	0	0	103,171	103,171	Complete	2008
Newly Generated (accum. < 400 anytime)	Cu Meters	< 400	Met	< 400	< 400	Ongoing	TBD
Nuclear Materials							
Highly Enriched Uranium: Blend Down & Ship	Trailers	1	1	336	336	Complete	2012
Plutonium Disposition - All Paths ***	Containers	25	25	127	5,600	2%	TBD
Used Nuclear Fuel: Receipts Stored in L-Basin	Bundles	-	59	3,185	3,650*	87%	TBD
Used Nuclear Fuel: Dissolve SRE **	Bundles	7	7	7	147	5%	2013
Soil, Ground Water & Facilities							
Remediation of Waste Sites	Waste Sites	18	18	399	515	77%	2034
Facilities Deactivated & Decommissioned	Facilities	0	0	284	1,101	26%	2034
Reduce Industrial Footprint by 85%	Sq Miles	37	37	265	265	Complete	2012

* Dependent upon negotiations with foreign countries & current capacity of L-Basin

** Represents Used Nuclear Fuel from Sodium Reactor Experiment (SRE) campaign

*** EM non-pit Pu

Liquid Waste: Vitrification Process

Canister Production



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Vitrify Insoluble Waste (Sludge)	Canisters Produced	275	277	3,528	7,580	47%	2026

Liquid Waste: Saltstone Processing

Saltstone Production Facility

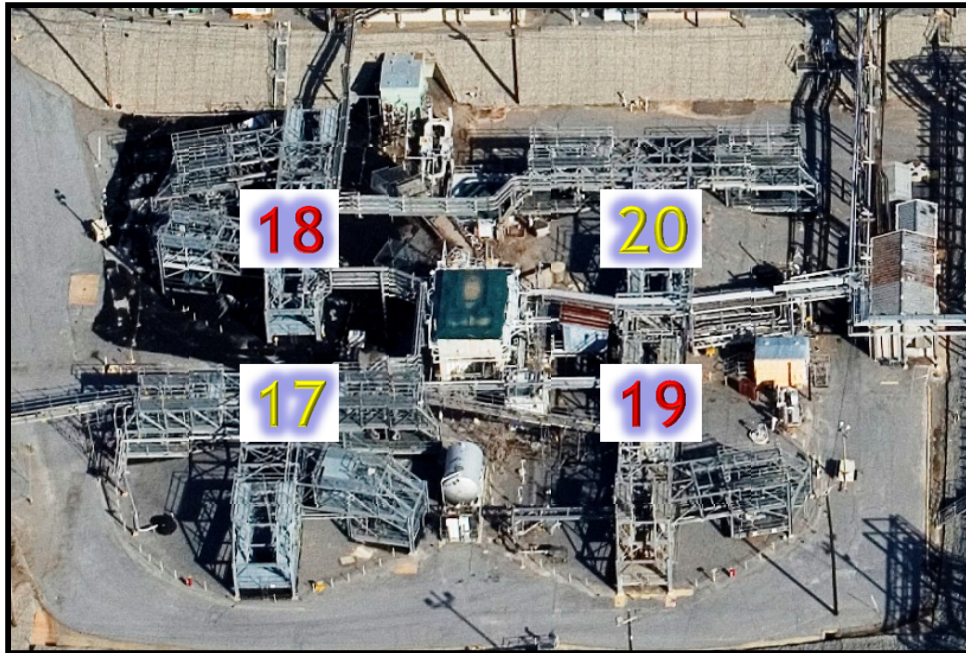


Saltstone Disposal Unit (SDU2)



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Process Salt Solution	K Gallons Processed	1,286	1,251	6,719	124,657	5%	2026

Liquid Waste: Tank Closure



Tanks 17 & 20 closed in 1997
Tanks 18 & 19 closed in 2012



Tanks 18 & 19 Closure Celebration

Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Close Tanks-Old Style	Tanks Closed	2	2	4	24	17%	2022
Close Tanks-New Style	Tanks Closed	0	0	0	27	0	2028

Solid Waste Disposal: Transuranic Waste

Transuranic Waste (TRU) Shipment to WIPP



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
TRU- Legacy (in storage prior 2009)	Cubic Meters	1,680	1,602*	9,490	11,084	86%	2014
TRU- Newly Generated	Cubic Meters	0	73*	73	3,980	Ongoing	TBD

*** FY 12 Best Year Ever**

Solid Waste Disposal: Mixed & Low Level Waste

Mixed Waste Shipment to Utah



Low Level Waste (LLW) Disposal of L-Area Scrap - On Site



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
M&LL-Legacy* (pre 2008)	Cubic Meters	0	0	103,171	103,171	100%	2008
M&LL-Newly Generated	Cubic Meters	< 400**	Met	< 400	< 400	Ongoing	TBD

* Prior to April 2008

** Accumulation of M&LL not to exceed 400 Cu Meters at anytime

Nuclear Materials

Blended down Highly Enriched Uranium (HEU) being Shipped to TVA



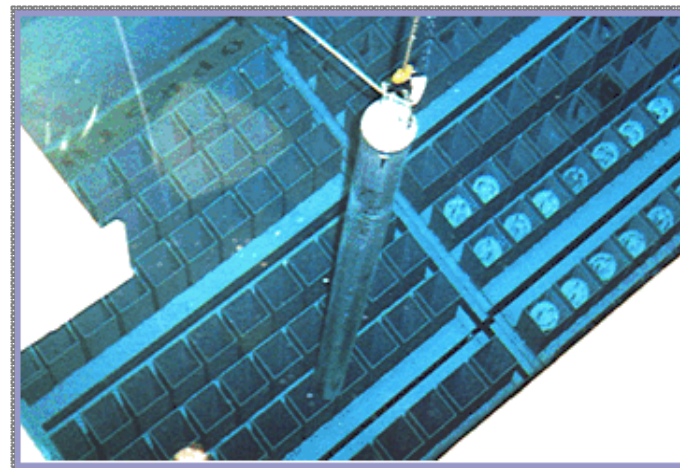
Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
HEU - Blend Down & Ship	Trailers	1	1	336	336	Complete	2012

Nuclear Materials

**Plutonium
3013 Type Container**



**Used Nuclear Fuel (UNF) Bundle
Stored in L- Basin**



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Plutonium Disposition (All Paths)***	3013 Type Container	25	25	127	5,600	2%	TBD
UNF: Receipts Stored	Bundles	-	59	3,185	3,650*	87%	TBD
UNF: Dissolve SRE**	Bundles	7	7	7	147	5%	2013

* Dependent upon negotiations with foreign countries and current capacity of L-Basin

** Represents Used Nuclear Fuel from Sodium Reactor Experiment (SRE) campaign

*** EM non-pit Plutonium

Waste Site Remediation

R Ash Basin: Before



R Ash Basin: Complete



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Remediation of Waste Sites	Waste Site	18	18	399	515	77%	2034

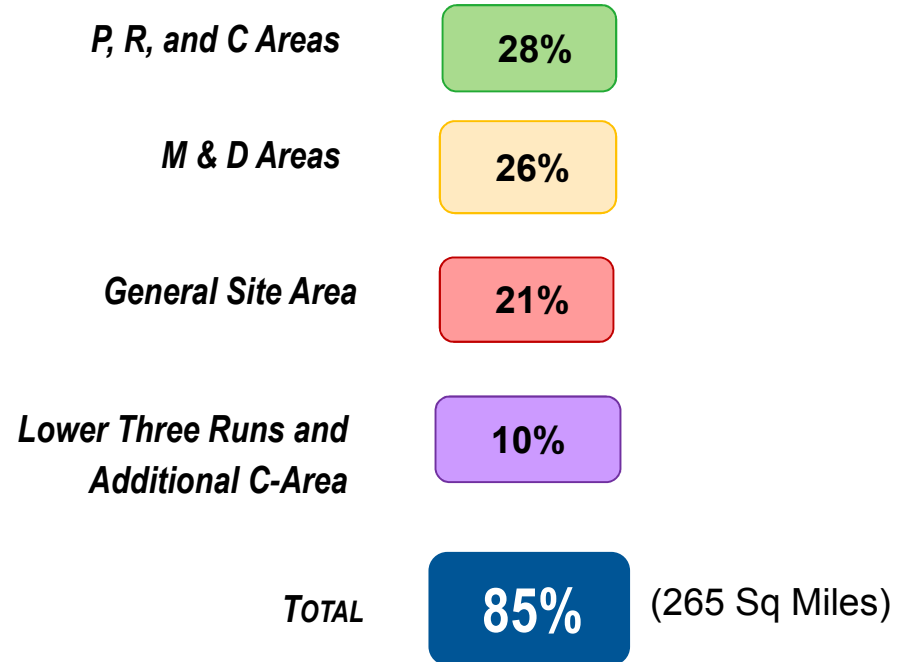
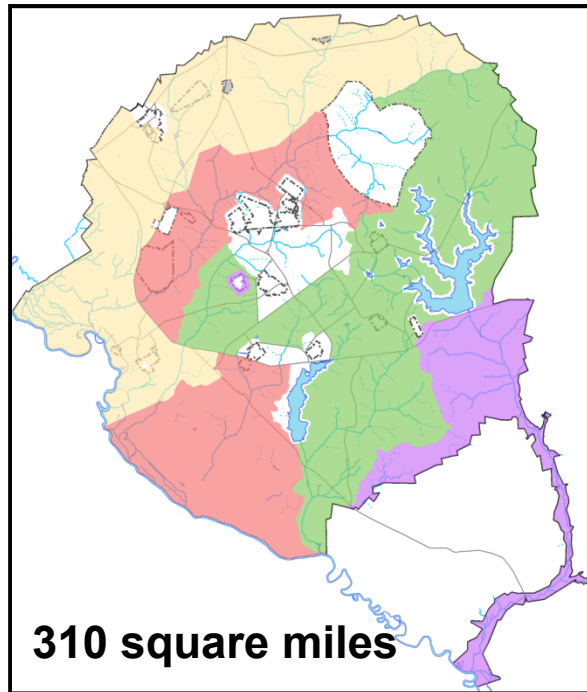
Facility Deactivation & Decommission

Deactivation & Decommission Heavy Water Components Test Reactor (HWCTR)



Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Facilities Deactivated & Decommissioned	Facilities	0	0	284	1,101	26%	2034

Industrial Footprint Reduction



Footprint Reduction is achieved when soil & ground surface contamination associated with waste units & facility remnants is cleaned up

Performance Measure	Unit of Measure	Target FY12	Actuals FY12	Cum FY12	End State	% Complete	Est. Year Complete
Reduce Footprint	Square Miles	37	37	265	265	Complete	2012

Summary

- **DOE-SR will continue to update and validate Lifecycle measures for the key operational areas of EM cleanup operations.**
 - Performance Targets for FY13 & beyond will be shared with the CAB when available
- **Suggestions from the CAB for any additional improvements are welcomed.**

Acronyms

ARP	Actinide Removal Process
D&D	Deactivation & Decommission
DWPF	Defense Waste Processing Facility
HEU	Highly Enriched Uranium
LLW	Low Level Waste
MCU	Modular Caustic Side Solvent Unit
MLLW	Mixed Low level Waste
Pu	Plutonium
SRE	Sodium Reactor Experiment
SWPF	Salt Waste Processing Facility
TRU	Transuranic Waste
UNF	Used Nuclear Fuel
WIPP	Waste Isolation Pilot Plant